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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/642,480	08/18/2003	Nobuyuki Enomoto	MA-582-US	3814

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EXAMINER	
TSEGAYE, SABA	

ART UNIT	PAPER NUMBER
2419	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/642,480	ENOMOTO ET AL.	
	Examiner	Art Unit	
	SABA TSEGAYE	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-84* is/are pending in the application.

4a) Of the above claim(s) *4-10,15-30,34-40,45-57,60,63-71,79 and 84* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 11-14, 31-33, 41-44, 58-59, 61-62, 72-78 and 80-83* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the amendment filed 07/14/08. Claims 1-3, 11-14, 31-33, 41-44, 58-59, 61-62, 72-78 and 80-83 are pending. Currently no claims are in condition for allowance.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 77 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 77 recites "using a link free bandwidth to calculate a cost" which is a mathematical operation without being limited to a practical application as it is not tied to a machine or transforms the underlying subject matter to a different state or thing.

Claim Rejections - 35 USC § 102

3. Claims 14, 62 and 78 are rejected under 35 U.S.C. 102(e) as being anticipated by Higashiyama (US 2001/0025318 A1).

Regarding claims 14, 62 and 78, Higashiyama discloses a node that configures a spanning tree over a network to which a plurality of nodes are connected (0041) comprising: generating a spanning tree in which each node in the network serves as a root node (0024), and forwarding a frame using a spanning tree in which the destination serves as a root node (0025).

4. Claims 74 and 75 are rejected under 35 U.S.C. 102(e) as being anticipated by Shah-Heydari (US 7,203,743 B2).

Regarding claim 74, Shah-Heydari discloses a spanning tree configuration method in a network to which a plurality of nodes are connected, comprising the step of:

making a new node participate in an auxiliary spanning tree only (connecting an auxiliary node to a spanning hierarchical protection tree using protection tree), not in an existing spanning tree when adding the new node (col. 9, lines 48-56).

Regarding claim 75, Shah-Heydari discloses a spanning tree configuration method in a network to which a plurality of nodes are connected, comprising the step of:

making a removing node participate in an existing spanning tree only, not in an auxiliary spanning tree when removing the node (disconnecting a node for a spanning hierarchical tree by designating a backup parent of the disconnected node in the tree to be a primary parent…, col. 2, lines 16-22).

5. Claim 76 is rejected under 35 U.S.C. 102(e) as being anticipated by Miller et al. (US 2004/0027665 A1).

Regarding claim 76, Miller discloses a spanning tree configuration method in a network to which a plurality of nodes are connected, comprising the step of:

creating a tree after a change using an auxiliary system (using table-1), when a network configuration has changed (a system of reconfiguration without shutting down the network (0019; 0060)).

6. Claim 77 is rejected under 35 U.S.C. 102(e) as being anticipated by Larsson et al. (US 2003/0161268).

Larsson discloses a spanning tree configuration method in a network to which pluralities of nodes are connected (see fig. 3; 0186), comprising the step of: using a link free bandwidth to calculate a cost (0024; 0026; 0029; 0148).

Claim Rejections - 35 USC § 103

7. Claims 1, 2, 31, 32, 58, 72 and 80-83are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. (US 2004/0027995 A1) in view of Seaman (US 6,934,263 B1).

Regarding claims **1, 58, 72, 80, 81 and 83**, Miller discloses a node that configures a spanning tree over a network to which a plurality of nodes are connected (see fig. 3), comprising:

generating a new spanning tree after a network configuration change while continuing to operate the spanning tree that existed before the configuration change (a system of reconfiguration without shutting down the network (0019)). Further, the reconfiguration is performed without losing messages. In addition, Miller discloses a technique by which nodes of a router network execute a reconfiguration decision, eventually resulting in a new state of the network in which message are forwarded using a new spanning tree. **Regarding claims 31 and 82,** generating a logic topology after a network configuration change is performed by a computer-readable storage medium (0019, claim 36). However, Miller does not disclose stabilizing first the new spanning tree to be used for forwarding. Seaman teaches that frame is forwarding through any bridge when spanning tree information has been completely distributed and is stable (column 2, lines 16-20). It would have been obvious to one skilled in the art at the

time the invention was made to stabilize first the new spanning tree of Miller to be used for forwarding in order to provide a loop-free tree (column 2, lines 19-40).

Regarding claims 2 and 32, Miller discloses wherein the network configuration change is addition or remove of a node or a change in link topology (0011, 0014).

8. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higashiyama (US 2001/0025318 A1).

Higashiyama discloses all the claim limitations as stated above, except for a computer readable storage medium. However, it would have been obvious to one ordinary skill in the art at the time the invention was made to use software-based machines, the benefit using computer-readable device is that programs can be changed and upgraded and new futures are added easily than hardware changes.

9. Claims 3, 11-13, 33, 41-43, 59, 61, 73 and 77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al. in view of Seaman as applied to claim 1 above, and further in view of Sistanizadeh et al. (US 6,963,575 B1) and Larsson et al. (US 2003/0161268).

Regarding claims 3, 11, 33, 41, 59, 61 and 73, Miller in view of Seaman discloses all the claim limitation as stated above. Further, Miller discloses that "router agree on a common criterion for measuring distance between nodes in the network. There may be multiple spanning trees" (0044). Miller in view of Seaman, however, does not expressly disclose generating a new spanning tree at the time of a link cost change.

Sistanizadeh teaches that if Spanning-Tree Protocol **costs**/performance parameters change, the spanning-tree algorithm reconfigures the spanning-tree topology and reestablishes the link by activating the standby path (column 14, line 65-column 15 line 3).

It would have been obvious to one of ordinary skill in the art the time the invention was made to use a link cost, such as that suggested by Sistanizadeh, to the reconfiguration system of Miller in view of Seaman in order to provide a flexible and an efficient system.

Regarding claims 12, 42 and 77, Miller discloses that "…the need for changing a topology arises from a number of conditions…" (0011). Further, Miller discloses that "…each router of network 100 has associated therewith a spanning tree, which lays out the **best path** according to some criterion…" (0044). However, Miller in view of Seaman and Sistanizadeh do not expressly disclose that on of the criterion is a free bandwidth.

Larsson teaches using a link free bandwidth to calculate a cost (0024; 0026; 0029; 0148).

It would have been obvious to one of ordinary skill in the art the time the invention was made to use a free bandwidth as one of criterion, such as that suggested by Larsson, to the system of Miller in view of Seaman and Sistanizadeh. One would have been motivated to do this because it would make the system more accessible and flexible.

Regarding claims 13 and 43, Miller discloses wherein the availability status is defined as a CPU load (0044).

Response to Arguments

10. Applicant's arguments with respect to claims 1-3, 11-14, 31-33, 41-44, 58-59, 61-62, 72-78 and 80-83 have been considered but are moot in view of the new ground(s) of rejection.

Applicant argues (Remarks, page 37) claim 76 recites "*creating a tree after a change using an auxiliary system*". The Examiner has failed to cite any reference witch discloses or suggests such a feature. Examiner respectfully disagrees. Miller clearly discloses a dynamic reconfiguration of a system that the **reconfiguration is accomplished without shutting down** the network. Further, Miller discloses that each router 108 configures **a new topology** in Table-1 and old topology in Table-0 until configuration stabilizes to a point where all routers are using the new table for all messages. The Table-1 is initially empty until a reconfiguration is initiated. Examiner believes that the claim, given its broad reasonable interpretation, reads on Miller reference.

Regarding claim 74, Applicant argues (Remarks, page 39) that *Shah-Heydari does not teach making a new node participate in an auxiliary spanning tree only*. Examiner respectfully disagrees. Shah-Heydari clearly discloses connecting an auxiliary node to a spanning hierarchical protection tree using **protection path** (capacity) from the auxiliary node to the root node. The protection capacity is reserved for carrying auxiliary data which is different than **working** capacity that represents bandwidth which is available to carry data during normal network operation (column 5, lines 63-67).

Regarding claim 75, Applicant argues (Remarks, page 40) that Shah-Heydari does not disclose "*making a removing node participate in an existing spanning tree only*." Examiner respectfully disagrees. Shah-Heydari clearly discloses that a node is disconnected from existed

spanning tree (not auxiliary) to backup parent. This shows that **the node is removed from** an existing spanning tree. Examiner believes that the claim, given its broad reasonable interpretation, reads on Shah-Heydari reference.

Regarding claim 77, Applicant argues that Larsson fails to disclose or suggest *"a spanning tree configuration method."* Examiner respectfully disagrees. Larsson discloses in para. [0186] that "routing unit 116 with a new connection parameters, and forwarding the connection parameters to the involved network nodes using such as **spanning-tree** forwarding or any other conventional mechanism.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SABA TSEGAYE whose telephone number is (571)272-3091. The examiner can normally be reached on Monday-Friday (7:30-5:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on (571) 272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would

like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Saba Tsegaye
Examiner
Art Unit 2419

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/Wing F. Chan/
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11/21/08